

Notice of Allowability

Application No.

10/026,318

Applicant(s)

DEWA, ANDREW S.

Examiner

Art Unit

Jack Dinh

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 08/04/03.
2. ☒ The allowed claim(s) is/are 1-30.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some* c) ☐ None of the:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).
- * Certified copies not received: _____.
5. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
(a) ☐ The translation of the foreign language provisional application has been received.
6. ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

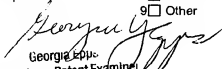
7. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
8. ☒ CORRECTED DRAWINGS must be submitted.
(a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
1) ☐ hereto or 2) ☐ to Paper No. _____.
(b) ☒ including changes required by the proposed drawing correction filed 04 August 2003, which has been approved by the Examiner.
(c) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No. _____.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet.

9. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- 1 ☐ Notice of References Cited (PTO-892)
3 ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
5 ☐ Information Disclosure Statements (PTO-1449), Paper No. _____.
7 ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material
- 2 ☐ Notice of Informal Patent Application (PTO-152)
4 ☐ Interview Summary (PTO-413), Paper No. _____.
6 ☐ Examiner's Amendment/Comment
8 ☒ Examiner's Statement of Reasons for Allowance
9 ☐ Other


George J. Jones
Supervisory Patent Examiner
Technology Center 2800

REASONS FOR ALLOWANCE

1. Claims 1-30 are allowed. The following is a statement of the examiner's reasons for allowance. The present application relates generally to micromechanical systems and more particularly to a micromirror device. More specifically, independent claim 1 discloses a micromirror device comprising an outer frame portion, a rotational gimbal portion hinged to the frame portion and moveable relative to the frame portion about a first axis, an inner rotational mirror portion having a reflective upper face surface hinged to the gimbal portion for movement of the mirror portion relative to the gimbal portion about a second axis, and a plurality of truss members disposed beneath at least the inner rotational mirror portion, all of which is obvious over Laor et al. (U.S. Patent No. 6,295,154) in view of McClelland et al. (U.S. Patent Application Publication No. 2001/0022682), as addressed in the previous Office Action. However, the claimed invention is distinguished over the prior art in that the mirror portion and the truss members are formed from a first layer and a second layer, with a thin oxide layer disposed between the first and second layers, portions of the second layer removed to form the truss members and portions of the first layer forming the mirror portion. Independent claim 17 is also directed to a micromirror device which includes the novel limitation, as described above. Regarding claim 27, prior art fails to disclose a method of manufacturing a micromirror device comprising providing a silicon on insulator (SOI) wafer having a first layer bonded to a second layer, a thin oxide layer being disposed between the first and second layers, wherein the second layer is thicker than the first layer; removing a portion of the second layer to define a truss member height in the

second layer; patterning and etching the truss member height defined areas of the second layer to form a plurality of truss members; and patterning and etching the first layer to form a frame portion, a gimbal portion disposed within the frame portion, and a mirror portion disposed within the gimbal portion. Therefore, the claimed invention is considered to be in condition for allowance as being novel and non-obvious over the prior art.

2. The prior art taken either singly or in combination fails to anticipate or fairly suggest the limitations of the independent claims, in such a manner that a rejection under 35 USC 102 or 103 would be improper. The claimed invention is therefore considered to be in condition for allowance as being novel and non-obvious over prior art. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Other Information/Remarks

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jack Dinh whose telephone number is (703) 605-0744. The examiner can normally be reached on M-T (8:30 AM - 6:30 PM). If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y Epps can be reached on (703) 308-4883. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular

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communications and (703) 872-9319 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

September 24, 2003

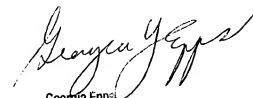
Jack Dinh
Patent Examiner

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communications and (703) 872-9319 for After Final communications. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

September 25, 2003

Jack Dinh
Patent Examiner



Georgia Epps
Supervisory Patent Examiner
Technology Center 2800